

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A cut of a piezoelectric resonator comprising:
a quartz plate having an electric axis on an X axis, a mechanical axis on a Y axis, and an optic axis on a Z axis, said plate having a side parallel to an X' axis established by rotating the X axis and Y axis in a clockwise direction about the Z axis within an angle of from about 3 to 30 degrees to form the X' and Y' axes, said quartz plate further having a side parallel to a Z' axis obtained by rotating the Z axis and Y' axis about the X' axis in the clockwise direction within an angle of from about 33 to 36 degrees to form the Z' and Y'' axes,

wherein the quartz plate has sides parallel to an X'' axis and a Z'' axis, respectively, which have been rotated within angles of from about -35 to -2 degrees in the clockwise direction about the \cancel{Y} ' Y'' axis that is a thickness direction of the cut of the piezoelectric resonator.

2. (Currently Amended) A cut of a piezoelectric resonator as set forth in claim 1, wherein when a rotational angle about the Z axis, a rotational angle about the X' axis, and a rotational angle about the \cancel{Y} ' Y'' axis are defined to be ϕ degrees, θ degrees, and Ω degrees, respectively, and

$\Omega^\circ = (-0.0037 \times \Phi^3 + 0.1106 \times \Phi^2 - 1.161 \times \Phi + 0.239 \pm 3)^\circ$ (wherein, $3.0 \leq \Phi \leq 30$) is satisfied.

3. (Previously Presented) A piezoelectric resonator comprising:
the cut of the piezoelectric resonator as set forth in claim 1.
4. (Previously Presented) A piezoelectric device having a piezoelectric resonator as set forth in claim 3.